REMARKS

Claims 1 and 3-18 are pending. Claims 8-11 were previously withdrawn from consideration. By virtue of this response, claims 5 and 16 have been cancelled, claims 1 and 14 have been amended, and new claim 19 has been added. Accordingly, claims 1, 3, 4, 6, 7, 12-15, and 17-19 are currently under consideration.

Support for the amendment to claims 1 and 14 and new claim 19 is found, for example, in the claims as originally presented and throughout the present specification. See, e.g., page 23, lines 2-6 and page 33, lines 5-11; page 15, line 23 to page 17, line 11; and page 35, line 21 to page 36, line 15. Accordingly, no new matter has been added. Cancellation and amendment of certain claims is not to be construed as a dedication or abandonment of any unclaimed subject matter by Applicants, and moreover Applicants have not acquiesced to any rejections and/or objections made by the Patent Office. Applicants explicitly reserve the right to pursue prosecution of any subject matter in continuation and/or divisional applications.

For the Examiner's convenience, Applicants' remarks are presented in the same order in which they were raised in the Office Action.

Rejections under 35 USC § 103

Claims 1, 3-7, 12-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al., U.S. Patent No. 6,201,823 (hereinafter "Kimura") in combination with Zauner et al., publication by material research society (hereinafter "Zauner").

In maintaining the rejection, the Examiner admits that Kimura does not disclose a GaN substrate having a (0001) plane whose crystal orientation is tilted away from a <0001> direction by an angle which is equal to or greater than about 0.05° and which is equal to or less than about 2°. (Office Action: Page 3, lines 6-10). The Examiner states, however, that Zauner discloses a "GaN substrate as a homo-epitaxial growth at tilted angle of 0.2, 4 degrees [sic]...." (Office Action: Page 3, lines 11-12).

Applicants submit that Kimura and Zauner, alone or in combination, fail to disclose or suggest a nitride compound semiconductor light emitting device as presently claimed. In particular, claim 1 is amended to recite a nitride compound semiconductor light emitting device including "a GaN substrate having a (0001) plane whose crystal orientation is tilted away from a <0001> direction by an angle which is equal to or greater than 0.05° and less than 2°." (Emphasis added). The recited range of tilt angle does not include the tilt-angles disclosed or suggested by Zauner, and the combination of Kimura and Zauner therefore does not disclose or suggest the nitride semiconductor light emitting device as presently recited.

Initially, it is noted that Zauner discusses a morphology of the nitride compound semiconductor formed on a (000-1) surface (i.e., the final surface is nitride) and a tilt-angle of the surface. (see, Zauner: page 1, Introduction, second paragraph). In general, it is known to form hexagon-shaped "hillocks" in the nitride compound semiconductor formed on the (000-1) surface. These "hillocks" are convexo-concave in a macroscopic view and particularly formed in the nitride compound semiconductor formed on the (000-1) surface. Such "hillocks", however, cannot be observed in the nitride compound semiconductor formed on the (0001) surface as recited by the present claims.

In contrast to the disclosure and discussion of Zauner, the semiconductor light emitting device as recited by claim 1 includes a tilt-angle of the (0001) surface (i.e., Ga surface of the GaN substrate). The effect caused by the recited features of claim 1 is described, e.g., on page 15, line 23 to page 19, line 12 of the present specification. For example, one of the effects of the particular range of tilt-angle is the "flatness" of the surface. The "flatness" is not a flatness of hillocks in a "macroscopic" view as described in Zauner, rather a flatness of the surface in a "microscopic" view (i.e., two dimensional growth mode in which a surface is grown layer-by-layer) as discussed in the specification (see, page 15, line 23 to page 19, line 12 of the present specification). The flatness of the surface in a "microscopic" view is desired since it is desirable to have a uniform composition of In included in the emitting layer (in particular, a well layer). (see, e.g., page 18, line 14 to page 19, line 12 of the present specification).

Furthermore, Zauner discloses a tilt-angle of the (000-1) surface is preferably 4° (e.g., 4° is preferable over 2°, for which Zauner describes "[t]he step flow resulting from the 2° misorientation appeared to be insufficient to overgrow the centres of the hillocks." (Zauner: Page 2)). In contrast, the present claims recite a range of tilt-angle of the (0001) surface is greater than or equal to 0.05° and less then 2°. Accordingly, Zauner teaches a tilt angle of greater than 2°, as 2° is insufficient for the purposes of overgrowing the hillocks (see, Zauner: Page 2). Further, the present specification describes that the characteristics becomes rapidly worse when the tilt angle is above 2°. (see, e.g., page 34, line 20 to page 38, line 15 and Figs. 6-9). Accordingly, the recited range of tilt angles is not disclosed or suggested by Zauner.

Thus, the preferable range of the tilt-angle disclosed by Zauner is different from the range of the tilt-angle recited in claim 1 and one of ordinary skill in the art would not have been motivated to combine and/or modify the references to meet the particular features of claim 1. The range of the tilt-angle recited by claim 1 is not included within the range of the tilt-angle disclosed by Zauner. Further, the recited angle is not suggested by Zauner because Zauner discusses the flatness of hillocks in a "macroscopic" view, whereas features of the present claim are directed to the flatness of the surface on a "microscopic" view (i.e., two dimensional growth mode as discussed above), and Zauner discloses 2° misorientation being insufficient to overgrow the centres of the hillocks as compared with a 4° misorientation. Accordingly, the teachings and problem to be solved by Zauner are different from that of the features of claim 1 and the rejection should be withdrawn.

Claims 14 has been amended similarly to claim 1 and is allowable over Kimura and Zauner for at least similar reasons as claim 1 discussed herein. Additionally, claims 3, 4, 6, 7, 12, 12, 15, and 17-19, which depend variously from claims 1 and 14 should be allowable over Kimura and Zauner for at least similar reasons as claims 1 and 14.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no.299002051800. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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